

27. A NEW RECORD OF *MEINECKIA PARVIFOLIA*
(WIGHT) WEBSTER FROM INDIA

During a study of the flora of Calicut, we came across a rare specimen, which turned out to be *Meineckia parvifolia* (Euphorbiaceae). As far as we know, this is the first report of this species from India. This is not described in any of the local floras and, therefore, a brief description of the species is given below to help its identification.

M. parvifolia (Wight) Webster: A perennial, glabrous herb with many weak branches; leaves about 3×2.5 cm alternate ovate, acute, truncate or rounded at base, membranous, glabrous, green above, glaucous beneath, with 3-4 pairs of lateral veins, petiole filiform up to 2.5 cm; stipules minute, lanceolate; flowers in axillary monoecious clusters; female flowers solitary, terminal; males 1-3 below; pedicels filiform up to 2 cm. in fruits; perianth lobes 5, ovate or obovate obtuse, hyaline with green midrib, 1 mm long, slightly larger in female flowers, persistent; stamens in male flowers 5, filaments partially connate, anthers 2 celled dehiscing by a transverse slit, pistillode 0; ovary in female flowers subglobose, styles 3, spreading, deeply bifid, stigma capitate; fruits glabrous, 2.5 mm long; seeds flattened, brown, reticulate, 2 mm long.

Flowers and fruits: August - September.

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28. ON FRESH WATER PHYTAL FAUNA OF
VISAKHAPATNAM

Qualitative animal community studies of the aquatic vegetation are of recent origin. The fauna of fresh water weed *Eichhornia crassipes* was worked out by Michael (1968) from Barrackpore, India in a fresh water fish pond. Petr (1968) studied the fauna of *Pistia stratiotes* L. and *Ceratophyllum demersum* L. from man made Volta lake of Ghana. The only pertinent reference in the marine environment in India is

that of Sarma (1972). Omitting these references there are practically no published accounts evaluating the importance of the weeds as a biotope and their significance in the bioeconomy of the aquatic systems. The importance of the weeds in the studies pertaining to the biological productivity need not be overemphasized as they harbour varied and abundant life which forms the chief sources of food for the littoral fishes.

The ecological advantages of the phytal are that the weeds provide good amount of oxygen, a variety of hiding places from predators, abundant food supply, firm anchorage and protection from current velocity. It further serves as breeding ground for the spawning of certain organisms and as nursery ground for the young (Sarma 1972).

The present communication deals with the preliminary observations of the fauna associated with two fresh water weeds (*Chara* and *Spirogyra*) in a fresh water stream at Visakhapatnam, Andhra Pradesh.

MATERIAL & METHODS

Samples of algae were collected and the quantitative estimation of organisms were related to unit volume/unit weight of the plant as was done by Ball (1948), Stube (1958), Michael (1968) and Petr (1968). Samples of algae were collected from the margins of the stream, transferred to polythene bottles and were brought to the laboratory. The samples were transferred to basins containing filtered fresh water for a general observation of the animals in the living condition. The displaced volume of the weeds along with the animals was taken by keeping the algae in a measuring cylinder of one litre capacity containing known volume of filtered water. After preliminary examination of the living animals they were fixed in 10% formaldehyde solution and thoroughly shaken to remove the majority of the clinging animals. To make sure that all the adnating and clinging life was removed, small amounts of algae were taken in a petridish and were thoroughly combed with a needle under a binocular microscope. The animals thus separated were counted under a stereo microscope with incident illumination. The wet weight of weeds was taken after removing the external moisture by pressing the algae in between the two folds of a blotting paper. The biomass values of two important groups namely oligochaetes and chironomids were also calculated. A minimum of 12 individuals of each group were kept in a hot air oven at 60°C temperature for about 24 hours. They were weighed in a microbalance. The individual weight of each animal was calculated and was multiplied by the total number of organisms of the group.

OBSERVATIONS

The numerical density and percentage composition of the animal populations inhabiting the *Chara* and *Spirogyra* per 100 gm wet weight of algae are given in the table. The maximum total animal densities on the two selected weeds (*Chara* and *Spirogyra*) were 6741 and 9175 organisms per 100 gm respectively. As many as 10 major taxonomic groups of animals namely turbellarians, nematodes, oligochaetes, copepods, ostracods, cladocera, hydrocarines, chironomids, insect larvae, and gastropods were recorded.

TABLE

Groups	<i>Chara</i>		<i>Spirogyra</i>	
	No/100G	Percentage Composition	No/100G	Percentage Composition
Turbellaria	123	1.82	225	2.45
Nematoda	533	7.90	1925	20.99
Oligochaeta	1495	21.43	2175	23.71
Copepoda	500	7.41	775	8.44
Ostracoda	1198	17.77	925	10.08
Cladocera	328	4.86	550	5.99
Hydrocarina	328	4.86	150	1.63
Chironomida	974	14.44	1025	11.17
Insect larvae	369	5.47	975	10.62
Gastropoda	943	13.98	450	4.90
Total	6791	99.94	9175	99.98

Among the *Chara* fronds oligochaetes (1495), ostracods (1198), chironomids (974), gastropods (943), nematodes (533), and copepods (500) were dominant comprising more than 70% of the total fauna. Among the *Spirogyra* thalli all animal forms attained their maximum abundance. However while all other animals attained maximum numbers among the *Spirogyra* filaments, the gastropods and hydrocarines were found in their greatest abundance among the coarse, cushion type thallus of *Chara*. This may be a case of specificity for these two groups of animals. Further studies on the specific relations of algae and animals are under progress.

The biomass values of the two selected groups (oligochaeta and chironomidae) were high in the case of *Spirogyra* as shown below.

	<i>Chara</i>	<i>Spirogyra</i>
Oligochaeta	173.4 mg/100g	261.0 mg/100g
Chironomidae	730.5 mg/100g	891.7 mg/100g

The maximum total density found in the present studies is more or less comparable with that of Michael (1968) who observed a density range 9000 to 11200 per litre of *Eichhornia crassipes*. The high

numbers observed on *Eichhornia* may be due to its root systems which carries good amount of sediment which in turn acts as an incentive for the colonization of detritophobus fauna.

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29. DIATOMS OF NAINITAL

The collections were made during a botanical excursion in October 1970 and were preserved in 4% formalin. The diatoms were cleaned by treating them first with concentrated hydrochloric acid and then with concentrated sulphuric acid to which a few crystals of potassium dichromate were added.

In this preliminary note seventeen common diatoms belonging to seven genera are included. Of these one belongs to the order Centrales while the remaining sixteen belong to Pennales. The dominant genera are *Cymbella* and *Gomphonema*.